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CLAIMS

What is claimed is:

1. A method of polishing a material layer on a wafer, comprising the steps of:

determining a non-compensated thickness to be removed from the layer;

determining an offset thickness;

determining a current removal rate;

calculating a compensated removal rate using said non-compensated thickness, said offset thickness and said current removal rate; and

polishing the layer according to said compensated removal rate.

2. The method of claim 1 wherein said calculating a compensated removal rate comprises the step of calculating said compensated removal rate according to the following Formula:
Compensated removal rate = (non-compensated thickness/non-compensated thickness + offset thickness) * current removal rate.

3. The method of claim 1 wherein said determining an offset thickness comprises the steps of determining a prescribed material layer thickness, determining a target material layer thickness and determining a difference between said prescribed material layer thickness and said target wafer thickness.

4. The method of claim 3 The method of claim 1 wherein said calculating a compensated removal rate comprises the step of calculating said compensated removal rate according to the following formula:
$$\text{Compensated removal rate} = (\text{non-compensated thickness} / \text{non-compensated thickness} + \text{offset thickness}) * \text{current removal rate}.$$

5. The method of claim 1 wherein said determining a current removal rate comprises the step of providing a sample wafer, providing a sample layer on said sample wafer, and polishing said sample layer.

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6. The method of claim 5 The method of claim 1 wherein said calculating a compensated removal rate comprises the step of calculating said compensated removal rate according to the following formula:
$$\text{Compensated removal rate} = (\text{non-compensated thickness} / \text{non-compensated thickness} + \text{offset thickness}) * \text{current removal rate}.$$

7. The method of claim 5 wherein said determining an offset thickness comprises the steps of determining a prescribed material layer thickness, determining a target material layer thickness and determining a difference between said prescribed material layer thickness and said target material layer thickness.

8. The method of claim 7 The method of claim 1 wherein said calculating a compensated removal rate comprises the step of calculating said compensated removal rate according to the following formula:
$$\text{Compensated removal rate} = (\text{non-compensated thickness} / \text{non-compensated thickness} + \text{offset thickness}) * \text{current removal rate}.$$

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9. A method of polishing a material layer on a wafer, comprising the steps of:

determining a non-compensated thickness to be removed from the layer according to said standard total wafer thickness;

determining an offset thickness;

determining a current removal rate;

calculating a compensated removal rate using said non-compensated thickness, said offset thickness and said current removal rate; and

polishing the layer according to said compensated removal rate.

10. The method of claim 9 The method of claim 1 wherein said calculating a compensated removal rate comprises the step of calculating said compensated removal rate according to the following formula:
$$\text{Compensated removal rate} = (\text{non-compensated thickness} / \text{non-compensated thickness} + \text{offset thickness}) * \text{current removal rate}.$$

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11. The method of claim 9 wherein said determining an offset thickness comprises the steps of determining a prescribed material layer thickness, determining a target material layer thickness and determining a difference between said prescribed material layer thickness and said target material layer thickness.

12. The method of claim 11 The method of claim 1 wherein said calculating a compensated removal rate comprises the step of calculating said compensated removal rate according to the following formula: $\text{Compensated removal rate} = (\text{non-compensated thickness} / \text{non-compensated thickness} + \text{offset thickness}) * \text{current removal rate}$.

13. The method of claim 9 wherein said determining a current removal rate comprises the step of providing a sample wafer, providing a sample layer on said sample wafer, and polishing said sample layer.

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14. The method of claim 13 The method of claim 1 wherein said calculating a compensated removal rate comprises the step of calculating said compensated removal rate according to the following formula:
$$\text{Compensated removal rate} = (\text{non-compensated thickness} / \text{non-compensated thickness} + \text{offset thickness}) * \text{current removal rate}.$$

15. The method of claim 13 wherein said determining an offset thickness comprises the steps of determining a prescribed material layer thickness, determining a target material layer thickness and determining a difference between said prescribed material layer thickness and said target material layer thickness.

16. The method of claim 15 The method of claim 1 wherein said calculating a compensated removal rate comprises the step of calculating said compensated removal rate according to the following formula:
$$\text{Compensated removal rate} = (\text{non-compensated thickness} / \text{non-compensated thickness} + \text{offset thickness}) * \text{current removal rate}.$$

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17. A method of programming a CMP apparatus to polish a material layer on a wafer, comprising the steps of:

determining a non-compensated thickness to be removed from the layer;

determining an offset thickness;

determining a current removal rate;

calculating a compensated removal rate using said non-compensated thickness, said offset thickness and said current removal rate;

programming said compensated removal rate into the CMP apparatus; and

polishing the layer according to said compensated removal rate using the CMP apparatus.

18. The method of claim 17 The method of claim 1 wherein said calculating a compensated removal rate comprises the step of calculating said compensated removal rate according to the following formula:
$$\text{Compensated removal rate} = (\text{non-compensated thickness} / \text{non-compensated thickness} + \text{offset thickness}) * \text{current removal rate}.$$

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19. The method of claim 17 wherein said determining an offset thickness comprises the steps of determining a prescribed material layer thickness, determining a target material layer thickness and determining a difference between said prescribed material layer thickness and said target material layer thickness.

20. The method of claim 17 wherein said determining a current removal rate comprises the step of providing a sample wafer, providing a sample layer on said sample wafer, and polishing said sample layer.